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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

1. The amendment filed on November 1, 2007 has been entered. Accordingly:
 - The specification has been amended;
 - Claims 1, 6, 7, 12, 15 and 16 have been amended;
 - claims 11 and 18 have been canceled; and
 - New claims 19-21 have been added.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5, 9, 11-14, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No.: 5,819,454 (Rosenitsch).

Regarding claims 1-3, 5 and 9, 11-14, 17 and 19, Rosenitsch a visual display assembly (Figure 4) comprising:

- A visual display 2' – the combination of elements 2 and 3 - cover with an array of pixels 2 (Figure 2) aligned with an array of contiguous, tubular, reflective cells 5, each having opening at its both – upper and lower ends – ends (Figure 4, column 2, lines 16-22); a transparent cover 4 including a lens 7 in each of the open ends on the side of array – upper opening -

- (Figure 4, column 2, lines 24-26); the array of the cells including a mesh of substantially square apertures (Figures 1 and 2, column 2, lines 16-22);
- A load-bearing bottom sheet 3 (Figure 4, column 2, line 14); the cover sheet 4 pressed into the grid shapes for weather proofing- operational requirement fulfilled by making element 6 and 4 tight for preventing transitional emission of radiation (Figure 4, column 2, lines 28-32); each of the cover sheet 4 segments being a lens 7 (Figure 4, column 2, line 16); the cover sheet 4 provided with surface treatment for optical improvement- tinted with a color - (Figure 4, column 1, lines 51 and 52); the array of cells 5 sandwiched between the cover sheet 4 and the visual display 2' (Figure 4); and the plurality of discrete light sources 2 arranged in rows, each row having light sources 2 offset with respect to the light sources 2 of the adjacent row (Figure 2).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.: 5,819,454 (Rosenitsch) in view of US Patent No. 4,754,202 (Havel).

Rosenitsch an assembly (Figure 4) comprising an array of reflective cells 1 discussed in section 3 above. However, Rosenitsch does not specifically teach each of the cells including a light guide.

On the other hand, Havel discloses a display panel (Figure 7) including an array of cells 23a defined by vertically extending walls 31a and 13b; and each cell including a light guide 26 (Figure 7, column 4, lines 34-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the assembly of Rosenitsch by providing the light guide received in each of the cells as taught by Havel for the benefits of uniformly scattering of light emitted by the light source positioned in each cell. Uniform scattering of light is desirable for uniform illumination of a display.

Regarding claim 21, Rosenitsch in view of Hovel discloses the visual display assembly meeting the limitations in similar manner as that applied to claim 1 discussed in section 3 above; and applied to claim 7 as discussed above.

6. Claims 4, 6, 8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.: 5,819,454 (Rosenitsch) in view of French Patent No. FR 2,563,929 A (Thery).

Regarding claims 4, 6 and 8, Rosenitsch an assembly (Figure 4) comprising an array of reflective cells 1 discussed in section 3 above. However, Rosenitsch does not specifically teach: an array of cells including a mesh of hexagonal cells; each of the cells including a parabolic reflector coaxial to the pixel of the display; and each of the reflective cells provided with surface treatment.

On the other hand, Thery discloses a display panel 1 (Figures 2 and 3, English translated abstract) including an array of reflective, hexagonal cells 2; each of the cells including a parabolic reflector (Figures 2 and 3, English translated abstract); and each of the reflective cells provided with surface treatment – coated with reflective material -.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the assembly of Rosenitsch by providing:

- An array of cells including a mesh of hexagonal cells as taught by Thery for the benefits of optimum arrangement for accommodation of large number of cells in the required area of the illumination device; and Providing parabolic reflector as taught by Thery for the benefits of providing illumination with collimated light rays desired for directing light effectively; and
- providing surface treatment as taught by Thery for the benefit of efficient reflection of light in the predetermined direction.

Regarding claim 20, Rosenitsch in view of Thery discloses the visual display assembly meeting the limitations in similar manner as that applied to claims 1 and 3 discussed in section 3 above; and applied to claim 8 as discussed above.

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No.: 5,819,454 (Rosenitsch) I view of German Patent No. DE 10006164 A1 (Heidelberger).

Regarding claim 10, Rosenitsch an assembly (Figure 4) comprising a lens means arranged between the array of cells and a cover sheet as applied to claim 15 discussed

in section 3 above. However, Rosenitsch does not specifically teach the cover including either glass or plastic.

On the other hand, Heidelberger discloses a display panel including: an array of cells covered attached to a transparent glass cover 6 (Figures 1, English translated abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the assembly of Rosenitsch by attaching the glass cover as taught by Heidelberger for the benefits of transmitting light through a material, which is tough and resistant to thermal, chemical and environmental deteriorating factors.

Allowable Subject Matter

8. Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record, US Patent No.: 5,819,454 (Rosenitsch), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not disclose a visual display assembly combining:

- A lens arranged between the array of cells and cover, and aligned for diffusion of light between adjacent cells as recited in the amended dependent claim 15.

The above-indicated combination- including positioning of a lens with respect to the cover and the adjacent cell, is disclosed in prior art of record.

Claim 16 is necessarily objected because of its dependency on the objected base claim 15.

Response to Amendment

9. Applicant's arguments filed on September 17, 2007 with respect to the 35 U.S.C. 102(b) rejections of claims 1-3, 5, 9, 11-14, 17 and 18, and the 35 U.S.C. 103(a) rejections of claims 4, 6-8, 10 and 16 have been fully considered but they are not persuasive.

Argument: Regarding claims 1-3, 5, 9, 11-14, 17 and 18, Rosenitsch does not teach the bottom sheet being a load-bearing member.

Response: The load-bearing characteristic imparts structural stability to a device or its structural member. It is a basic requirement for operation of any device. Technically, the required load-bearing characteristic would result with the adequate combination of material(s), size and shape of the structural member.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to realize that the visual display assembly of Rosenitsch must consist all its structural members having load-bearing characteristics, which is the vital operational requirement.

Argument: Regarding independent claim 3, the cell disclosed by Rosenitsch could not be interpreted as a tube.

Response: The limitation, "each cell including a tube," has been broadly interpreted as – each hollow cell volume including a tubular volume portion combined with two substantially conical volume portions.

Argument: Rosenitsch does not meet the limitation "the array comprising substantially square apertures" recited in claim 5.

Response: As discussed in section 3 above, the visual display assembly disclosed by Rosenitsch includes the array of the cells including a mesh of substantially square apertures (Figures 1 and 2, column 2, lines 16-22).

Argument: Regarding claim 9, Rosenitsch does not meet the limitation "a lens in each cell".

Response: As discussed in section 3 above, Rosenitsch discloses the visual display assembly including each of the cover sheet segments 4 being a lens 7 (Figure 4, column 2, line 16).

Argument: Regarding claim 12, Rosenitsch does not characterize the diffusing plates as cover sheet providing weatherproofing.

Response: Claim 12 (amended) recites the limitation as, "the cover sheet provides weatherproofing". Rosenitsch meets the above limitation as follows:

Weatherproofing is normally an operational requirement of any lamp. Rosenitsch teaches the cover sheet 4 pressed into the grid shapes, thus preventing transitional emission of radiation at the

edges of the plates 4. The above features would provide weatherproofing by providing elements 6 and 4 a tight-fit (Figure 4, column 2, lines 28-32);

Argument: Regarding claim 13, Rosenitsch utilizes a plurality of diffusing plates as lenses. It distinguish the prior art.

Response: Rosenitsch discloses the visual display assembly including cover plates 4, each with a lens (Figure 4, column 2, line 16). Refer to section 3 above.

Argument: Regarding claim 14, Rosenitsch does not teach surface treatment for optical improvement.

Response: Rosenitsch discloses the visual display assembly including cover plates 4 with surface treatment for optical improvement- the diffusing surface tinted with a color - (Figure 4, column 1, lines 51 and 52).

Argument: Regarding claim 19, Rosenitsch does not teach light sources arranged in plurality of rows, and the light sources are offset in each adjacent row.

Response: As discussed in section 3 above, Rosenitsch teaches the plurality of discrete light sources 2 arranged in rows, each row having light sources 2 offset with respect to the light sources 2 of the adjacent row (the element 3 bearing the light source layout, Figure 2).

Argument: Regarding claim 7, Havel discloses a light-scattering material, which is not equivalent to the light guide which allows substantially all the incident light to pass through without reflection.

Response: As discussed in section 3 above, Hovel teaches the display panel including a light guide 7. The light guide has been broadly interpreted as an optical element providing an optical medium for light transmission. The above discussed element 7 functions as the light guide.

Argument: Regarding claim 6, Rosenitsch in view of They does not teach "each cell including a parabolic reflector having an opening in the center".

Response: They teaches the reflective cavities 2 being either conical or parabolic. Refer to the website:
<http://v3.espacenet.com/textdes?DB=EPODOC&IDX=FR2563929&F=0&QPN=FR2563929&CY=ep&LG=en> for English translated text provided by the European Patent Office.

Argument: Regarding claim 8, They does not teach surface treatment applied to the walls of the cell

Response: They teaches the reflective cavities 2 having its wall surface treated - metallized with bombardment of metallic particles. Refer to the following website:
<http://v3.espacenet.com/textdes?DB=EPODOC&IDX=FR2563929&F=0&QPN=FR2563929&CY=ep&LG=en>

F=0&QPN=FR2563929&CY=ep&LG=en for English translated text
provided by the European Patent Office.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S. Sawhney whose telephone number is 571 272 2380. The examiner can normally be reached on 8:00 AM - 4:30 PM 30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Jong-Suk (James) Lee can be reached on 571 272 7044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2885

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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2/1/2008

/Hargobind S Sawhney/
Primary Examiner, Art Unit 2885